

ABSTRACT OF THE DISCLOSURE

A microwave plasma processing apparatus prevents the component parts of a process chamber from being influenced by heat associated with plasma, thereby

5 improving the quality of plasma processing performed in the process chamber. A wavelength reducing member reduces a wavelength of a microwave transmitted therethrough. A slot electrode guides the microwave exiting the wavelength reducing member, the slot electrode provided adjacent to

10 the wavelength reducing member. A first temperature control device controls a temperature of at least one of the slot electrode and component parts including the wavelength reducing member provided in the vicinity of the slot electrode. The microwave exiting the slot electrode

15 is introduced to the process chamber so that plasma is generated by the microwave within the process chamber.

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